<center>**REMARKS**</center>

Reconsideration of this application, as amended, is respectfully requested.

Claims 1, 3-25, 17-49, 51-73, 75-97, 99, 101, 103, 105, 107, 109, and 111 remain pending.

Claims 1, 3-15, 17-25, 27-39, 41-49, 51-63, 65-73, 75-87, 89-97, 99, 101, 103, 105, 107, 109 and 111 have been rejected. Claims 16, 40, 64, and 88 have been objected to.

Claims 1, 4, 25, 28, 49, 52, 73, 76, 97, 101, 105, and 109 have been amended. No claims have been cancelled. No claims have been added. Support for the amendments is found in the specification, the drawings, and in the claims as originally filed. Applicant submits that the amendments do not add new matter.

Applicant reserves all rights with respect to applicability of the Doctrine of Equivalents.

Claims 1-8, 19-20, 25, 27-32, 43-44, 49, 51-56, 67-68, 73, 75-80, 91-92, 97, 99, 101, 103, 105, 107, 109, and 111 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,665,641 B1 to Coorman ("Coorman") in view of Micheal Banbrook, "Nonlinear Analysis of Speech From a Synthesis Perspective", Chapter 4 ("Banbrook").

Amended claim 1 reads as follows:

> A machine-implemented method comprising:
> extracting portions from time-domain speech segments, <u>the portions surrounding a segment boundary within a phoneme</u>;
> creating feature vectors that represent the portions in a vector space, the feature vectors incorporating phase information of the portions, wherein the creating feature vectors comprises <u>constructing a matrix W containing the portions surrounding the segment boundary within the phoneme; and decomposing the matrix W containing the portions surrounding the segment boundary within the phoneme</u>; and
> determining a distance between the feature vectors in the vector space.

(emphasis added)

The Examiner acknowledged that "Coorman fails to…disclose..features include phase information of the portions, … and wherein creating feature vectors comprises constructing a matrix W from the portions…"(Office Action, p. 4, 01/25/08).

Coorman discloses the following:

> One of the features used in the transition cost is the spectral mismatch between consecutive segments. The calculation of this spectral mismatch is based on a distance calculation between spectral vectors. This might be a heavy task as there can be many segment combinations possible. In order to reduce the computational complexity a <u>combination matrix--containing the spectral distances- could be calculated in advance for all possible spectral vectors occurring at diphone boundaries.</u>

(Coorman, col. 18, lines 16-25)(emphasis added)

Thus, Coorman merely discloses calculating the matrix containing the <u>spectral distances</u>. Coorman fails to disclose, teach, or suggest constructing a matrix W containing the portions of the time domain speech segment surrounding a segment boundary within a phoneme; and decomposing the matrix W containing the portions surrounding the segment boundary within the phoneme, as recited in amended claim 1.

Banbrook, in contrast, discloses non-linear analysis of speech from a synthesis perspective. More specifically, Banbrook discloses "the method of a singular value decomposition (SVD) reduction…the data is projected onto a phase space defined by the singular vectors of the data, which can then be partitioned into a signal subspace and a noise subspace". (p. 37, paragraph 3). In particular, Banbrook discloses that "… time delay embedding is first carried out, producing a N x w trajectory matrix X" (p. 37, paragraph 4).

Thus, Banbrook discloses producing the trajectory matrix, in contrast to constructing a matrix W containing the portions of the time domain speech segment surrounding a segment boundary within a phoneme; and decomposing the matrix W containing the portions surrounding the segment boundary within the phoneme, as recited in amended claim 1.

Thus, neither Banbrook, nor Coorman discloses, teaches, or suggest such limitations of amended claim 1.

Furthermore, even if Banbrook and Coorman were combined, such a combination would still lack constructing a matrix W containing the portions of the time domain speech segment surrounding a segment boundary within a phoneme; and decomposing the matrix W containing

the portions surrounding the segment boundary within the phoneme, as recited in amended claim 1.

Therefore, applicant respectfully submits that claim 1, as amended, is not obvious over Coorman, in view of Banbrook under 35 U.S.C. § 103(a).

Given that claims 3-8, 19-20, 25, 27-32, 43-44, 49, 51-56, 67-68, 73, 75-80, 91-92, 97, 99, 101, 103, 105, 107, 109, and 111 contain the limitations that are similar to those discussed with respect to amended claim 1, applicant respectfully submits that claims 3-8, 19-20, 25, 27-32, 43-44, 49, 51-56, 67-68, 73, 75-80, 91-92, 97, 99, 101, 103, 105, 107, 109, and 111 are not obvious over Coorman, in view of Banbrook under 35 U.S.C. § 103(a).

The Examiner has rejected claims 9-10, 21-23, 33-34, 45-47, 57-58, 69-71, 81-82 and 93-95 under 35 U.S.C. § 103(a) as being unpatentable over Coorman in view of Banbrook and in further view of Ansari et al., "Pitch Modification of Speech Using a Low-Sensitivity Inverse Filter Approach" ("Ansari").

For at least the same reasons as described above with respect to amended claim 1, even if the nonlinear analysis of Banbrook and pitch modification of Ansari were incorporated into the speech synthesis of Coorman, such a combination would still lack constructing a matrix W containing the portions of the time domain speech segment surrounding a segment boundary within a phoneme; and decomposing the matrix W containing the portions surrounding the segment boundary within the phoneme, as recited in amended claim 1.

The Examiner has rejected claims 11-15, 35-39, 59-63 and 83-86 under 35 U.S.C. § 103(a) as being unpatentable over Coorman and Banbrook in view of Ansari and in further view of Jerome R. Bellegarda, "Exploiting Latent Information in Statistical Language Modeling" ("Bellegarda").

For at least the same reasons as described above with respect to amended claim 1, even if the nonlinear analysis of Banbrook, pitch modification of Ansari, and the latent semantic information of Bellegarda were incorporated into the speech synthesis of Coorman, such a

combination would still lack constructing a matrix W containing the portions of the time domain speech segment surrounding a segment boundary within a phoneme; and decomposing the matrix W containing the portions surrounding the segment boundary within the phoneme, as recited in amended claim 1.

Applicant acknowledges with appreciation the Examiner's indication of allowance of claims 16, 40, 64, and 88 if re-written in independent form including all limitations of the base claim and any intervening claims. At this time, however, applicant does not amend the claims 16, 40, 64, and 88.

It is respectfully submitted that in view of the amendments and arguments set forth herein, the applicable rejections and objections have been overcome. If there are any additional charges, please charge Deposit Account No. 022666 for any fee deficiency that may be due.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Date: 04/25/2008   By: /Tatiana Rossin/
                                 Tatiana Rossin
                                 Reg. No.: 56,833

1279 Oakmead Parkway
Sunnyvale, California 94085-4040
(408) 720-8300

Customer No. 045217